

WHAT IS CLAIMED IS:

1 1. A pouch-type secondary battery unit, comprising: /

2 a first secondary battery cell comprising a first secondary battery body and a first case, the
3 first secondary battery body being disposed inside the first case, the first secondary battery cell
4 further comprising a first positive electrode terminal and a first negative electrode terminal
5 perforating out from said first case;

6 a second secondary battery cell comprising a second secondary battery body and a second
7 case, the second secondary battery body being disposed within the second case, the second
8 secondary battery cell further comprising a second positive electrode terminal and a second
9 negative electrode terminal perforating out from said second case; and

10 a safety circuit board disposed in an external void within said battery unit, said external
11 void being defined as being between the first and second secondary battery cells, the safety circuit
12 being electrically connected to the first and second positive electrode terminals and to the first and
13 second negative electrode terminals.

1 2. The battery unit of claim 1, wherein the first and second cases each comprise:

2 a case body having a space for accommodating one of the first and the second battery
3 bodies; and

4 case cover coupled to the case body to seal the battery body contained within the case
5 body.

6 3. The battery unit of claim 2, wherein each case body comprises a flanged portion, the
7 positive and negative electrode terminals perforating the respective case at the flanged portion of
8 the case body.

1 4. The battery unit of claim 1, wherein the first battery cell and the second battery cell are
2 positioned so that the first positive electrode terminal is disposed near the second positive
3 electrode terminal and the first negative electrode terminal is disposed near the second negative
4 electrode terminal.

1 5. The battery unit of claim 1, wherein the first and second battery bodies being helically
2 wound positive and negative electrode plates.

1 6. A pouch-type secondary battery unit, comprising: /
2 a case comprising a case body having a plurality of spaces, each one of said plurality of
3 spaces being spaced apart from each other by a predetermined distance, said case further
4 comprising a case cover extending from a side of the case body and coupled with the case body
5 to seal all the plurality of spaces, wherein the case cover is folded such that the spaces are stacked
6 on top of each other;
7 a plurality of battery cells, each battery cell having a battery body and two electrode
8 terminals, each battery body being disposed in respective ones of said plurality of spaces, each of
9 said battery bodies having positive and negative electrode terminals extending outward through

10 the case; and

11 a safety circuit board, disposed in a external void defined by the folding of the case cover,
12 the safety circuit board being connected to each of said positive electrode terminals and the
13 negative electrode terminals of each of said plurality of battery cells.

1 7. The battery unit of claim 6, wherein the case body comprises a flanged portion, the
2 positive and negative electrode terminals extending through the flanged portion.

1 8. The battery unit of claim 6, wherein the positive electrode terminals of different battery
2 cells in the battery unit are all aligned with each other and the negative electrode terminals of the
3 different battery cells in the battery unit are all aligned with each other.

1 9. The battery unit of claim 6, wherein each of the battery bodies being helically wound
2 positive and negative electrode plates.

1 10. A pouch type battery unit, comprising: /
2 a case comprising a case body and a cover, the case body being attached to the cover, said
3 case body comprising a plurality of spaces;
4 a plurality of battery bodies, each one being disposed in corresponding ones of said
5 plurality of spaces, each of said battery bodies having two electrode terminals perforating said case
6 body; and

7 a safety device electrically connected to said terminals of said battery bodies in such a way
8 as not to add bulk to said battery unit, said safety device being external to said case.

1 11. The battery unit of claim 10, said cover of said case being folded onto itself so that
2 each of said plurality of battery bodies are stacked on top of each other.

1 12. The battery unit of claim 10, said case body having a flanged portion that mates with
2 said cover, said safety device being disposed between two separate sections of said flanged portion
3 when said case is folded onto itself so that each of said plurality of battery bodies are stacked on
4 top of each other.

1 13. The battery unit of claim 10, each of said plurality of battery bodies being comprised
2 of electrode plates stacked on top of each other and not being wound.

1 14. The battery unit of claim 10, each of said plurality of battery bodies being comprised
2 of electrode plates being helically wound.

1 15. The battery unit of claim 10, each of said plurality of battery bodies being electrically
2 connected to each other in seriatim.

1 16. The battery unit of claim 10, each of said plurality of battery bodies being electrically

2 connected to each other in parallel.

1 17. A pouch type secondary battery unit, comprising: /

2 a plurality of secondary battery cells, each battery cell comprising a battery body disposed
3 in a sealed case, each battery cell further comprising a pair of electrode terminals of opposite
4 electrical polarity electrically connected to said battery body and perforating said case; and

5 a safety circuit board being electrically connected to the terminals of each of said plurality
6 of battery cells, said safety device being disposed in such a way as to not add to the size of the
7 battery unit.

1 18. The battery unit of claim 17, each of said plurality of secondary battery cells being
2 stacked on top of each other, each of said cases having a flanged portion protruding outward from
3 the battery body, wherein a void is formed between flanged portions of adjacent stacked battery
4 cells, said void being external to said sealed case, said safety device being disposed within said
5 void.

1 19. The battery unit of claim 17, each of said plurality of battery cells being electrically
2 connected to each other in parallel.

1 20. The battery unit of claim 17, said safety circuit board being any one of or both of a
2 positive temperature coefficient device and a safety vent.